

REMARKS

As a preliminary matter, Applicants appreciate the Examiner's continued allowance of claims 5-9.

Claims 1-4 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (U.S. Patent No. 5,815,342) in view of Fukuichi (JP 02-227814). In response, Applicants amended independent claim 1 to include the subject matter of claim 10 to clarify that the ferromagnetic backing layer has an easy axis of magnetization in an in-plane direction, and respectfully traverse the rejection.

In the Office Action, the Examiner states under item 4 on page 2 that Akiyama discloses a perpendicular magnetic recording medium 20 in FIGs. 1 and 2 having a perpendicular magnetic recording layer 23 and a backing layer 22 backing the perpendicular magnetic recording layer. The backing layer has an in-plane magnetization. However, the Examiner acknowledges that a specific temperature and/or a material has not been recited in Akiyama. To overcome these deficiencies, the Examiner cites Fukuichi.

With respect to Fukuichi, it is asserted that Fukuichi discloses a perpendicular magnetic recording medium including a ferrimagnetic backing layer 2, which is formed of a GdFe alloy and would produce a proper compensation temperature. Therefore, the Examiner asserts that it would be obvious to one having ordinary skill in the art to substitute the backing layer of Akiyama with the material of the backing layer, which is formed of GdFeCo, as taught by Fukuichi. The asserted motivation is that

lacking any unobvious or unexpected results, substituting one well-suited material for another similar material would have resulted in routine engineering experimentation, and a high-density perpendicular recording medium would be generated. Applicants respectfully traverse these statements of the Examiner. On page 4, item 5 of the Office Action, the Examiner further states that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in knowledge generally available to one of ordinary skill in the art, and cites *In re Fine* and *In re Jones*.

Applicants request reconsideration allowance of all claims presently pending in the application including amended claim 1. Applicants submit that *In re Fine* and *In re Jones* do not apply in the manner as suggested by the Examiner for the reason that the general conditions of the claim are not disclosed in the prior art cited and applied to the claims as amended. General conditions that the Examiner relies upon are simply not disclosed in the prior art, and result only from application of hindsight in light of the claim recitations relating to the apparatus as claimed, including the recitations relating to a backing layer being formed of a ferrimagnetic material having a compensation temperature in a vicinity of a recording/reproducing temperature, and the backing layer having an easy axis in an in-plane direction.

Fukuichi has a ferrimagnetic layer to assist with vertical magnetization of the recording magnetic layer during deposition of the vertical magnetic recording layer.

Fukuichi teaches that the vertical magnetic anisotropy of the vertical magnetic recording layer is improved by the magnetization of the ferrimagnetic layer. Therefore, high density magnetization becomes possible. To achieve this result, Fukuichi teaches that the ferrimagnetic backing layer has an easy axis in a direction perpendicular to the substrate surface. Thus, Fukuichi teaches that when using a ferrimagnetic layer that has a compensation temperature in a temperature range of magnetic recording and reproduction, it is necessary to align the ferrimagnetic backing layer in the direction perpendicular to the substrate surface. Fukuichi fails to teach a backing layer formed of a ferrimagnetic material having a compensation temperature in a vicinity of the recording/reproducing temperature that has an easy axis in an in-plane direction. Akiyama also fails to disclose or suggest this feature, as noted by the Examiner above.

Applicants respectfully submit that, in addition to the stated deficiencies of each reference regarding claim 1, the use of these two references suggests picking and choosing of certain features from each reference in attempting to combine them using the benefit of hindsight. Without hindsight, there would be no motivation to combine Akiyama and Fukuichi in the manner suggested by the Examiner, and if the references were combined, there would be no motivation to use the material of Fukuichi without using the material in a manner that was consistent with the teachings of Fukuichi, as to do so would require modification of the magnetization of the backing layer that is not taught or suggested by any of the references in combination with the material of the backing layer used in Fukuichi.

Fukuichi specifically teaches that it is an advantage to have the easy axis of magnetization in the perpendicular direction. The vertical magnetic anisotropy of the vertical magnetic recording layer is improved by the magnetization of the ferrimagnetic layer. Fukuichi teaches that because the ferrimagnetic layer has an extremely coercive force, it is not possible to write thereto. Therefore, no adverse effect is caused in the recording/reproducing characteristics.

The Examiner is using impermissible hindsight to select only a portion of the teaching of Fukuichi, without considering the reference as a whole. If one skilled in the art were to substitute the backing layer of Fukuichi for the backing layer of Akiyama, then one would use the ferrimagnetism layer 2 of Fukuichi in its entirety. Therefore, a combined structure of Akiyama and Fukuichi would have a ferrimagnetic backing layer that has an easy axis of magnetization directed perpendicular to the substrate to achieve the advantages recited in Fukuichi, and not in an in-plane direction, as now recited in amended claim 1. For these reasons, withdrawal of the §103 rejection of claims 1-4 is respectfully requested.

For all of the foregoing reasons, Applicants submit that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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